THE RELATIONSHIP BETWEEN INFORMATION TECHNOLOGY USAGE AND JOB SATISFACTION IN ADMINISTRATION AT UNIVERSITI TUN HUSSEIN ONN MALAYSIA

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ABSTRACT

The issue of job satisfaction has been in discussion for long time around the world. Nowadays, researchers are more interested to study about job satisfaction due to global development in various fields, especially those related to information technology (IT) areas. Paradoxically, many IT research reports claim that investment in IT does not directly contribute to higher organizational performance, such as productivity. It is generally acceptable, the fact that high job satisfaction at workplace contributes to higher performance quality. As such, this research seeks to study relationship between IT usage and job satisfaction, focusing on people who are always attached to IT facilities in their work. The findings of this study are important as many organizations now work around IT infrastructure, especially university administrators. Normally, if the job satisfaction is high, then performance quality of the organization will be high and vice-versa. Therefore, it is crucial to investigate the antecedent of what makes job satisfaction high, such as IT and its supporting attributes. In this study, it focuses on the relationship between the three sections in the structure of the study, namely independent variable (demography), first dependent variable (IT usage in administration) and second dependent variable (job satisfaction). The quantitative method is applied to collect all data for this study which is known as survey approach. Questionnaires are finalized and sent to UTHM administrators and 277 sample respondents are gathered. Survey data are analyzed through statistical method of analysis using SPSS. Three domains of IT usage in Administration, namely Training, Strategy and Data Quality, are compared with 6 demographic elements. T-test, One-way ANOVA and the Least Significant Difference (LSD) test are applied to identify the level of three IT usage in Administration domains and their significant differences. Methodological tool of Pearson correlation is used to analyze relational the relationship between IT usage and job satisfaction. This study found that the relationship between IT usage and job satisfaction, among university administrators, is positive and highly correlated.

ABSTRAK

Isu kepuasan kerja telah dalam perbincangan untuk masa yang panjang di seluruh dunia. Kini, penyelidik lebih berminat untuk mengkaji tentang kepuasan kerja kerana pembangunan global dalam pelbagai bidang, terutamanya perkara yang berkaitan dengan teknologi maklumat (TM). Anehnya, banyak laporan kajian TM melaporkan bahawa pelaburan dalam TM tidak menyumbang secara langsung terhadap peningkatan prestasi organisasi, seperti produktiviti. Secara amnya, ianya adalah satu fakta bahawa kepuasan kerja yang tinggi menyumbang secara positif terhadap kualiti prestasi. Oleh itu, kajian ini berhasrat ingin mengenalpasti hubungan antara pengunaan TM dan kepuasan pekerjaan, yang memberi fokus terhadap staf yang selalu menggunakan kemudahan TM di tempat kerja. Hasil dapatan kajian ini penting kerana kini, banyak organisasi beroperasi menggunakan infrastruktur TM, terutamanya golongan pentadbir universiti. Pada kebiasaannya, jika kepuasan kerja adalah tinggi, ini akan menyebabkan kualiti prestasi juga menjadi tinggi, dan demikianlah sebaliknya. Oleh yang demikian, ianya adalah satu perkara yang wajar untuk kita selidiki perkara yang menyumbang terhadap kepuasan kerja yang tinggi, seperti TM dan elemen yang menyokongnya. Kajian ini fokus terhadap perhubungan antara tiga seksyen dalam struktur kajian, iaitu pembolehubah tidak bergantung (demografi), pembolehubah bergantung yang pertama (pengunaan TM di kalangan pentadbir) dan pembolehubah bergantung kedua (kepuasan pekerjaan). Kaedah kuantitatif diaplikasikan untuk mengumpul data, iaitu kaedah kajiselidik. Soal selidik yang telah siap, dihantar kepada pentadbir UTHM. Sebanyak 277 soal selidik dari responden telah berjaya dikumpulkan. Data kajian dianalisa menggunakan kaedah statistik, SPSS. Tiga domain pengunaan TM oleh kalangan pentadbir , iaitu Latihan, Strategi dan Kualiti Data, dibandingkan dengan 6 elemen demografi. Ujian-T, ANOVA Sehala dan Ujian LSD diaplikasikan untuk mengenalpasti tiga tahap pengunaan domain utama pentadbiran TM dan perbezaan-perbezaan yang ketara di kalangannya. Alat metodologi, korelasi Pearson digunakan untuk menganalisa

hubungan diantara pengunaan TM dan kepuasan pekerjaan. Kajian ini mendapati bahawa hubungan antara pengunaan TM terhadap kepuasan kerja dan kalangan pentadbir universiti, adalah positif dan terkolerasi dengan tinggi.

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LIST OF SYMBOLS AND ABBREVIATIONS

IT	-	Information Technology
T	-	Training
S	-	Strategy
DQ	-	Data Quality
JS	-	Job Satisfaction
SE	-	Self-Efficacy
EC	-	Employee Commitment
InDV	-	Independent variables
FDV	-	First dependent variables
SDV	-	Second dependent variables
q	-	Questionnaire
UTHM	-	Universiti Tun Hussein Onn Malaysia
SPSS	-	Statistical Product and Service Solutions

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CHAPTER 1

INTRODUCTION

1.1 Overview

The present study empirically examines the relationship between information technology (IT) usage and job satisfaction on administration at the Universiti Tun Hussein Onn Malaysia (UTHM). The Universiti Tun Hussein Onn Malaysia Information technology is one of the 24th universities in Malaysia that provides the provision of education, research and training since its organization. Training, strategy and data quality in this university is an on-going effort to lead the programmer's administration towards market-oriented value. It focuses on the staff through experiential learning for the production of human resources and well-trained professionals who can be needed to stimulate sustainable development.

The information technology has been recently dominated all aspects of life. It is used in both formal and informal purposes to keep archives and documents save, easy to operate, sharing and transferring the knowledge (Al-Hammadany and Heshmati, 2011; Harry and Martin, 2010). Thus, played a significant role and provides accuracy and timeliness results. However, the real strength of information technology lies in the ability to link different systems to share information and exchange. Moreover, the utilization of the Internet and other information technologies has become prevalent among staff (Parvin and Kabir, 2011; Bokhari, 2005). Thus, it provides high level usage of IT to see the type of an institution that

will be needed to direct and manage the dissemination of technology within the university, and outlines the framework for standards by which they can achieve it.

So far, a computer can maintain a database accurately and consistently; thereby it is required to improve the quality of information technology in order to get the high job satisfaction level (Dijk, 2009). Despite the importance of information technology in the workplace few empirical studies, such as (Parvin and Kabir, 2011; Floyd and Wolf, 2010; Harry and Martin, 2010, Steven and Schmidt; 2007) has been conducted that determines the effect of information technology on job satisfaction. The vital and significant worth of information technology and job satisfaction cannot be ignored (Danziger and Dunkle, 2005). Therefore, the information in the organizations needs to be managed effectively and systematically in order to raise the job satisfaction of the staff. Thus, it furnishes the motivation to see the relationship between IT usage and job satisfaction among non-academic staff at Universiti Tun Hussein Onn Malaysia (UTHM).

1.2 Problem Statement

In UTHM, it is generally found that among administrators to face the problem of software update. For example, staff using application software, such as Microsoft Excel, is facing difficulty in opening files. Excel files saved in newer version spreadsheet (MS Excel 2010) cannot be accessed on older Excel programme version (MS Excel 2007). At times, new Excel software has different command icons, tools and application settings. These differences cause time lost, difficulty in using new files and lower staff satisfaction. Such a situation affects staff performance, productivity, emotion, and quality of work.

It is a common practice at UTHM, for older computer hardware to be phased and changed by new hardware system. This change is important for UTHM to keep up with technological advances in information technology due to bigger software capacity and processing power. This gives impact to problems such as new operating

system (Windows 7) is no longer compatible with older operating system (Vista). This situation can pose problems in transferring files between computers, opening related software and slowing down office work.

Data sharing among superior and supporting staffs are becoming more problematic in this changing situation. For example, the superiors have used new computers and application software; and yet the staffs are still using the old ones. So, this situation cause difficulty in file exchange between superiors and his/her supporting staffs or vice-versa. The above mentioned problems in UTHM require better information technology strategy, proper training and higher data quality.

Furthermore, information system applications and information technology (IT) are important for supporting high-functionality and management of university, such as UTHM. The sole emphasis of information technology usage is not only learning and education rather it also takes managerial and administrative tasks into account such as information management, staff records, academic information, curriculum information, data analysis, data classification to provide integrated and intact information (Danziger and Dunkle 2005; Huang and Hsiao, 2007). Meanwhile, Malaysia is a country that aspires to achieve a developed nation status by 2020 (Nyagetera, 2001). Therefore, this brings out just a point to focus on the balancing of IT usage and job satisfaction (Floyd and Wolf, 2010; Harry and Martin, 2010).

Therefore, this study investigating the relationship between IT usage and job satisfaction in order to have a better perspective incorporating a case study conducted at Universiti Tun Hussein Onn Malaysia (UTHM). Thus, the findings could be transferred and applied for the betterment of countries like Iraq (Attar and Sweiss, 2010; Al-Hammadany and Heshmati, 2011).

1.3 Research Questions

Based on the overview and the problem statement of the study, three research questions are formulated that are described as follows;

a) What is the level of training, strategy, data quality and overall IT usage in IT usage in Administration at UTHM?
b) What are the significant differences between the elements of demographic components towards the elements of information technology usage?
c) Is there any positive relationship between information technology usage and job satisfaction?

1.4 Research Aim

The aim of the research is to investigate on the relationship between information technology usage and job satisfaction in the administration sector at a Malaysian university.

1.5 Research Objectives

The objectives of the study are as follows;

a) To measure the levels of usage of information technology in the administration.
b) To study the significant differences between the demographic of the respondents and the use of information technology in administration.

c) To determine the relationship between the use of information technology and job satisfaction.

1.6 Research Hypotheses

The research hypotheses of the study are as follows;

a) There is a high level of information technology used in the administration.
b) There is a significant difference between the use of information technology and demography of the respondents.
c) There is a positive correlated relationship between information technology usage and job satisfaction.

1.7 Scope of the Research

This study focuses only to investigate the relationship between information technology usage and job satisfaction among administrators at Universiti Tun Hussein Onn Malaysia. The results will be comparing in terms of levels of information technology usage based on Wiersma (1995) criteria; to determine the significant difference t- test, one-way ANOVA, and Pearson's correlation is computed to measure the relationship between information technology usage and job satisfaction in administration at Universiti Tun Hussein Onn Malaysia .

1.8 Summary

IT usage has been in discussion of the many topics. However, in this chapter the whole study discusses solely on relationship of IT towards Job satisfaction. To understand deeper in this topic we must investigate the influence among demographic with respect to IT usage. It is also impactful to study the relationship between IT usages and job satisfaction. Chapter 2 provides the relevant background of IT and job satisfaction based on previous studies on IT usage within administration sectors. Chapter 3 illustrates research methodology; the research model design and the instrument. Chapter 4 of the thesis scrutinizes the analysis and findings of the study. Based on the acquired results, a thorough analysis related to demographic elements of respondents and the elements of IT usage in administration and job satisfaction has included. Finally, Chapter 5 summarizes all the observation made in this study and then it goes on to some directions for future work and concludes the thesis.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The chapter presents the appraisal theoretical and empirical literatures which are related to this study. The chapter is divided into five different parts; Technology and Information Technology; IT usage in administration, satisfaction and job satisfaction, job satisfaction in administration and the demographic of the study; the relationship between information technology usage and job satisfaction in administration; and the conceptual diagram used in this study followed by chapter summary.

2.2 Technology and Information Technology

According to the Oxford English Dictionary (1997) the word technology was derived in early 17th century from two Greek words *tekhnē* (art) + *logia* (craft) which eventually form the word '*tekhnologia*' carrying the meaning, 'systematic treatment'.

Thus, technology is defined by the dictionary as "the application of scientific knowledge for practical purposes, especially in industry and organizations". This definition is quite similar to the one suggested by Betz (1993) and Friar and

Horwitch (1986) “in which technology is applied science which conceives technology as a body of scientific and technical knowledge that is needed to innovate”. According to this view, technology lies between scientific knowledge and the productive activities derived from it. Thus, the function of technology is limited exclusively to the improvement and/or creation of new processes, products and services. Meanwhile, according to Sexton and Barrett (2004), technology is “the machines, tools and work routines used to transform material and information inputs (such as labor, raw materials, components and capital) into outputs (such as products and services). People are viewed as possessing knowledge, skills and motivation to perform a variety of tasks required to do the work of the firm”.

According to Fernandez, *et al*. (1999), technology is “much more than machinery for it involves the practical application of scientific knowledge that is codified and easily accessible in addition to nonscientific knowledge that may be embedded in the culture of society or company, group, worker or inventor tasks”. In line with this, Ford and Saren (1996) divide technologies into three categories; product, process and market technologies. Product technologies include firm’s abilities to design particular types of products or services and embedded in staffs that know how to perform such design works. Meanwhile, process technologies refer to what a firm uses to manufacture or to produce particular products or services. Market technologies, on the other hand, enable a firm to relate its products and services to other firms’ requirements and to their technologies. Market technologies also include skills needed to manage firm’s relationships with other companies.

Sathye (1999) defines adoption as “the acceptance and continued use of a product, service or idea”. A study by Mols *et al.* (1999) reveals that the diffusion of electronic banking is more determined by customer’s acceptance than by the seller offerings. O’Connell (1996) demonstrates that the explanation for slow growth of electronic banking is caused by security concerns, lack of knowledge about availability of such a service, electronic banking sites being not user friendly and the lack of access to computers or the Internet. Reports state that new technology adoption by the majority of the customers depends mainly on awareness, ease of use, safety and security, cost of the Internet banking, reluctance and lack of computer or Internet access (Aliyu *et al.* 2012; Wallis, 1997).

Shrivastava and Souder (1987) also have identified three distinct dimensions; hardware or machine technology, work sequencing or workflow dimension (sometimes known as procedural technology) and knowledge technology. Knowledge technology is the knowledge used in either inventing or designing technical systems, new products or in performing the work itself.

Wilson (1986) and Hickson *et al.* (1969) define technology as the know-how about the transformation of operational technologies and processes, material technologies and knowledge technologies. Based on the above considerations, technology at the company level can be defined as the output and the principal input of the innovation process and reflects the volume of knowledge, competencies and capabilities that the company possesses at a given moment in time Nieto and Pe´rez-Cano (2004).

The use of the Internet and other information technologies has become prevalent both in business and governments around the world (Danziger and Dunkle 2005). While information technology can be used to great advantage even in isolation, its real strength lies in the ability to link different systems to share information and exchange. It provides a high level of information technology to see the type of institution that will be needed to direct and manage the dissemination of technology within the university, and outlines the framework for standards by which they can achieve it.

2.3 IT usage in Administration

Information technology (IT) can be defined as “the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a microelectronics-based combination of computing and telecommunications” (Longley and Shain, 1985). The term in its modern sense first appeared in a 1958 article published in the Harvard Business Review, in which authors Leavitt and

Whisler commented that “the new technology does not yet have a single established name. We shall call it information technology”.

A report prepared by the MnSCU IT (1999) strategic planning team provides the following guiding principles:

1-IT must support the institutional missions of Malaysian Universities.

2-IT must enhance learning.

3-IT must be reliable, user-friendly, and appropriately accessible.

4-IT must balance common, diverse and unique needs of the campuses.

5-IT must be visionary and dynamic.

6-IT investment in people must balance the investment in technology.

7-IT must be customer-driven.

8-IT must manage expectations, cost and effectiveness.

These identified principals can be applied by using technical tools to perform all the processing fit of the data to ensure high-quality performance and satisfactory results while maintaining an orderly and problem-free environment. However, from the perspective of the researcher and assumptions, the IT usage in administration impacting can be more effective through training, strategy and data quality.

2.3.1 Training

Formal training in organizations is “a structured learning that takes place in a classroom environment”, where “learners are removed from the day-to-day work to engage in lectures, discussions, simulations, role plays, and other instructional activities” (Enos *et al.*, 2003).

According to Bassi and Van Buren (1999), formal training is the educational approach most widely used for management development. However, while formal

training is “one answer to helping people learn, that training is not sufficient to meet the request of continuous learning that was found by organizations” (Marsick and Watkins ,1992) .

The learning needs of managers are complex where evolving organizations cannot be met by formal training alone (Watkins and Marsick 2003). Stakeholders, in fact, reports that “they increasingly use informal learning merged with work activities to drive individual, work group and organizational learning and change”. As one respondent said that: “We have observed that managers and even employees are not interested in any activity related to their job. If you don’t merge [learning] with people’s work, they might not take advantage of it” (Watkins and Marsick, 2003).

Informal learning is “a broad term that covers many kinds of learning from experience” and may include a range of strategies including “self-directed learning, networking, coaching, mentoring, performance planning systems that are used for developmental purposes and trial-and-error” (Marsick and Watkins, 1992).

Morrison and Hock (1986) argue that on-the-job work experiences, as one form of informal learning, are the main source of learning for individuals in organizations. Regardless of the strategy, Marsick and Watkins (1992) propose that informal learning “can be planned or unplanned, but it usually involves some degree of conscious awareness that learning is taking place that describe the informal learning process as follows:

“Learning begins with a trigger of surprise or discomfort that prompts intentional reflection on experience. Reflection, in turn, leads to a search for new information, challenging of one’s own initial beliefs and experiments with new thinking, behaviors and feelings”. This trigger of surprise or discomfort, then, leads to informal learning in order to fill a need. This need could be met through any of the above informal learning strategies. Given the important outcomes of informal learning, it would seem that effective training must encourage and support informal learning both during and after training (Terrion, 2006).

Gasco *et al.* (2004) indicates in the study of them, deals with the influence of IT (Information Technology) in HRM (Human Resources Management) and more specifically on training policy, by means of the experience in this field. For this study go into more depth about the characteristics of the training model designed by organization to face new environments, the technologies used, the actions which have had most impact, the disadvantages and the success factors that have been detected trying to grow an E-learning organization. The study of this case has facilitated the identification of the following successful factors in a training policy: flexibility in time management for training; active participation by trainers; the establishment of control mechanisms that guarantee that the training really occurs; the creation of quality content; the promotion of interactive elements among trainers, among staff and with each other; the use of standardised and developed technologies and the gradual implementation of these experiences. As regards, objectives for the future emphasis, in the organization analysed is on maintaining progress in the use of E-learning as a way of adapting the training process.

2.3.2 Strategy

A strategy of technology is the overall plan which consists of objective(s), principles and tactics relating to use of the technologies within a particular organization. Such strategies primarily focus on the technologies themselves and in some cases the people who directly manage those technologies. The strategy can be implied from the organization's behaviors towards technology decisions, and may be written down in a document. Other generations of technology-related strategies primarily focus on (1) the efficiency of the company's spending on technology, (2) how people, for example the organization's customers and employees, exploit technologies in ways that create value for the organization, (3) the full integration of technology-related decisions with the company's strategies and operating plans, such that no separate technology strategy exists other than the de facto strategic principle that the

organization does not need or have a discreet technology strategy (Floyd and Wolf, 2010) .

A technology strategy has traditionally been expressed in a document that explains how technology should be utilized as part of an organization's overall corporate strategy and business strategy. In the case of IT, the strategy is usually formulated by a group of representatives from both the business and from IT sectors (Floyd and Wolf, 2010). Often the Information Technology Strategy is led by an organization's Chief Technology Officer (CTO). Accountability varies for an organization's strategies for other classes of technology. Although many companies prepare an overall business plan each year, a technology strategy may cover developments somewhere between three and 5 years into the future (Smith, 2003).

The United States have identified the need to implement a technology strategy in order to restore the country's competitive edge. In 1983 Project Socrates, a US Defense Intelligence Agency program was established to develop a national technology strategy policy, and this shows the importance of application systems and infrastructure and operation in this area (Saunders *et al*. 2010).

2.3.3 Data Quality

There are a number of theoretical frameworks for understanding data quality. A systems-theoretical approach influenced by American pragmatism expands the definition of data quality to include information quality, and emphasizes the inclusiveness of the fundamental dimensions of accuracy and precision on the basis of the theory of science (Ivanov, 1972). One framework, dubbed "Zero Defect Data" (Hansen, 1991) adapts the principles of statistical process control to data quality. A study conducted by Kahn *et al.* (2002) seeks to integrate the product perspective (conformance to specifications) and the service perspective (meeting consumers' expectations). Later, Price and Shanks, (2004) formulates a framework based on

semiotics to evaluate the quality of the form, meaning and use of the data. In addition, the International Association for Information and Data Quality (IAIDQ) was established in 2004 to provide a focal point for professionals and researchers in this field, and ISO 8000 is the international standard for data quality. This shows the importance of this data sharing and also the data control.

Data sharing is the exercise of making data used for scholarly research accessible to other investigators. A number of funding agencies and science journals require authors of peer-reviewed papers to share any supplemental information (raw data, statistical methods or source code) necessary to understand developed or reproduced published research. However, a great deal of scientific research is not subjected to data sharing requirements and many of these policies have liberal exceptions. In the absence of any binding requirement, data sharing is at the preference of the scientists themselves. In addition, in certain situations, agencies and institutions prohibit or severely limit data sharing to protect proprietary interests, national security, and subject/patient/victim confidentiality. Data sharing may also be restricted to protect institutions and scientists from use of data for political purposes (Campbell and Blumenthal, 2002).

According to Wikipedia (2013 c) “data and methods may be requested from an author years after publication. In order to encourage data sharing and prevent the loss or corruption of data, a number of funding agencies and journals have established policies on data archiving. Access to publicly archived data is a recent development in the history of science made possible by technological advances in communications and information technology”. Savage and Vickers (2009) argue that when researchers withhold data like this, they run the risk of losing the trust of the research community. Looking into these aspects, data must be share among employees to facilitate the work efficiently, but also must take into account permits participation by management levels and this can be done by data control.

2.4 Satisfaction and Job Satisfaction

Satisfaction is a set of feelings and sensations that summarizes the state of happiness, while happiness is required to itself. It then end of human perfection, and the maximum each man seeks to attainable. Through this definition it is easier for us to understand the meaning of job satisfaction. According to Kovack (1977), job satisfaction is a component of organizational commitment. Spector (1997) states that job satisfaction "can be considered as a global feeling about the job or as a related constellation of attitudes about various aspects or facets of the job."

Strumpfer *et al*. (1998) indicates that there is an encouraging but complex correlation between positive or negative dispositions and the various components of job satisfaction. When satisfaction is measured at a broader level, research has shown that those organisations with more satisfied workers are more effective than those with less satisfied workers (Robbins, 1998).

Buitendach and de Witte (2005) offer the view that job satisfaction is related to an individual's perceptions and evaluations of a job, and this perception is in turn influenced by their circumstances, including needs, values and expectations. Individuals therefore evaluate their jobs on the basis of factors which they regard as being important to them (Sempane *et al.* , 2002).

According to Neumann *et al.* (1988), job satisfaction among teachers can be expressed as their willingness and preparedness to stay in the teaching profession irrespective of the discomfort and the desire to leave teaching for a better job. Mwamwenda's (1995) research indicates that nearly 50% of rural teachers are dissatisfied with their working conditions. The research also reveals that teachers in these areas have indicated that they would not choose teaching again as a career if given a second chance.

Blood *et al*. (2002), in their research on speech language pathologists working in public schools, reveal that the longer they remained in their jobs, the

more likely they were to report higher levels of job satisfaction. Similarly, Rice and Schneider (1994) also state that, in Australia, teachers have reported that the level of participation in decision-making and autonomy are contributory factors in their levels of job satisfaction. Anderman, *et al*. (1991) posit the view that a school culture that emphasises accomplishment, recognition, and affiliation is related to teacher satisfaction and commitment and that principals' actions create distinct working environments within schools that are highly predictive of teacher satisfaction and commitment.

According to Shan (1998), teacher job satisfaction is a predictor of staff retention, a determinant of teacher commitment, and in turn a contributor to school effectiveness. Kim and Loadman (1994) list seven predictors of job satisfaction. They are interaction with students, interaction with colleagues, professional challenges, professional autonomy, working conditions, salary, and opportunity for advancement. However, there are also other factors that need to be considered, for example, class sizes, workload of teachers, changes in the school curriculum and labour policies which teachers have little or no control over.

Sempane *et al*. (2002) define job satisfaction as "a pleasurable or a positive emotional state resulting from the appraisal of one's job or job experience". Job satisfaction can be viewed as an employee's observation of how well their work presents those things which are important to them. Simply put, "job satisfaction is an attitude people have about their jobs" (Chelladurai, 1999). Balzer *et al.* (1997) define job satisfaction as "… the feelings a worker has about his or her job or job experiences in relation to previous experiences, current expectations, or available alternatives".

Visser *et al*. (1997) define job satisfaction as "…the attitude of workers toward the company, their jobs, their fellow workers and other psychological objects in the work environment." Isen and Baron (1991) surmise that "As an attitude, job satisfaction involves several basic components: specific beliefs about one's job, behaviour tendencies (intentions) with respect to it, and feelings about it".

Camp (1994) defines job satisfaction refers to the extent to which these needs and values are satisfied in the workplace. In conjunction with this, Robbins (1998) surmises that job satisfaction is based on "the difference between the amount of rewards workers receive and the amount they believe they should receive." Because job satisfaction may be an indicator of whether individuals (a) will be affectively connected to an institution, (b) will merely comply with directives, or (c) will quit (Ma and Macmillan, 1999), principals ought to have some understanding of the factors that influence teachers' satisfaction with their work lives and the impact this satisfaction has on teachers' involvement in their schools, especially when changes are implemented.

Farrugia (1986) has demonstrated that non-academic staff experience job satisfaction as a result of teaching a group of pupils or standard they feel comfortable with; appreciation expressed by parents, authority and pupils; passing on knowledge and values to others; teaching their favorite subjects; working with colleagues and exercising autonomy.

Participation in decision-making has been reported to contribute to job satisfaction among Australian teachers (Rice and Schneider, 1994). While in Japan, Mwamwenda (1995) indicates that job satisfaction among teachers was associated with freedom to do their work as they saw fit, a sufficient supply of learning material and equipment, a good salary, a reasonable class size as well as the support and cooperation of colleagues.

Wisniewski and Gargiolu (1997) have also demonstrated that teachers' job satisfaction in Poland is associated with freedom to do what they wanted, encouragement received from those in authority, participation in decision and policy making, adequate supply of teaching and learning resources, good salary, cooperation from pupils, parents and teachers, and participation in school management.

Van der Westhuizen and Smit (2001) have reported that there is a tendency worldwide towards job dissatisfaction in education in South Africa. Their research indicates that educators display dissatisfaction with the introduction of a new

education policy, new post structures and unfair appointments. In a study of black female teachers (Du Toit, 1994), job satisfaction was observed to be a function of pupils behaviour, job security, relationships with colleagues and pupils, and teaching as a task.

2.5 Job Satisfaction in Administration

Job satisfaction is described as how content an individual is with his or her job. The happier people are within their job, the more satisfied they are said to be. Job satisfaction is not the same as motivation, although it is clearly linked. Job design aims to enhance job satisfaction and performance; methods include job rotation, job enlargement and job enrichment. Other influences on satisfaction include the management style and culture, employee involvement, empowerment and autonomous work position. Job satisfaction is a very important attribute which is frequently measured by organizations (Parvin and Nurul Kabir, 2011).

Job satisfaction plays a significant role in change ambiguity tolerance and has significant effects on managerial and organizational performance (Nicolaidis and Katsaros, 2011; Brooks, 2000). It is mainly defined as a positive emotional state resulting from the pleasure an employee derives from the job (Locke, 1976; Spector, 1997); the affective, emotional and cognitive attitude held by an employee about various aspects of their work, (Nicolaidis and Katsaros, 2011; Wong *et al.,* 1998).

Affective events theory suggests the followings;

1- That job satisfaction is influenced by current emotions at any given time along with the emotional reactions history (Fischer, 2002).

2- That emotional labor requirements affect employees behavior and may result in work-events, daily hassles and uplift (Weiss and Cropanzano, 1996).

Relatively, situational theories assume that the interaction of variables such as task, emotional and individual characteristics also influence job satisfaction (Hoy and Miskel, 1996). With respect to the above, organizations may gain more in job satisfaction by removing sources of emotional dissatisfaction in the workplace and placing the responsibility for job satisfaction on the managers. However, from the researcher's perspective and assumption, dimensional impacting can be more effective through self - efficacy and employee commitment.

2.5.1 Self – Efficacy

Self-efficacy is defined as individuals beliefs about their capability to mobilise cognitive resources and courses of actions needed to successfully perform a specific task within a given context (Bandura, 1997; Ballout, 2009). Occupational self-efficacy reflects the conviction of a person that he/she can execute behaviours relevant to their own work. According to Schyns and von Collani (2002), occupational self-efficacy is relatively stable due to its correlations to personality characteristics. However, occupational self-efficacy can be assumed as less stable than general self-efficacy, that is, it might be more easily influenced by corresponding experience.

Self-efficacy is also broad enough to allow comparison between different types of jobs or professions (Schyns and von Collani, 2002), thus considering self-efficacy is useful for investigations in the context of work and organisations. Schyns and von Collani (2002) have found first evidence for its usefulness in organisational research and practice as indicated by the positive correlation between occupational self-efficacy and job satisfaction as well as organisational commitment.

Introducing a short version of the occupational self-efficacy instrument, Rigotti *et al*. (2008) report that there are positive correlations between occupational self-efficacy and job satisfaction as well as performance in five different countries.

Berings *et al.* (2007) also prove that there are positive correlations between occupational self-efficacy and some learning styles.

In a more recent study, Abele and Spurk (2009) notice that occupational self-efficacy measured at career entry (with a different instrument as Schyns and von Collani, 2002) had a positive impact on salary and status three years later as well as on salary change and career satisfaction seven years later. Thus, it can be said that the level of occupational self-efficacy before entering the labour market might be important for future career success.

2.5.2 Employee Commitment

Employee commitment is defined as the feeling of loyalty that employees have towards the organization that they work for, which largely depends on the extent to which they believe in the values and aims of the organization and feel personally involved in the task of making the organization successful. And over the last two decades many studies have been carried by researchers towards variables that appear to contribute to either job satisfaction or organizational commitment.

These variables are presented by Glisson and Durick (1988) into roughly three groups:

(a) Variables that describe characteristics of the job tasks performed by the workers;

(b) Variables that describe characteristics of the organizations in which the tasks are performed; and

(c) Variables that describe characteristics of the workers who perform the tasks.

A study by Huang and Hsiao (2007) shows that job characteristics are the most important determinant of commitment and satisfaction. This implies that managers can implement job redesign to improve employees' loyalty, identification and commitment. This involves the level of skill variety, task identity, task significance, autonomy, and feedback of the job. Results show that the better a firm's working conditions and organizational climate are, the higher satisfaction and commitment level its employees may hold.

Besides the strategy of job redesign, changing management style is a useful strategy for management to promote employees satisfaction and commitment (Huang and Hsiao, 2007). Although the social context of the previous study was Asian, the authors claim that the effects of personal factors on satisfaction and commitment in both societies are consistent with the Western society. Job satisfaction and organizational commitment are closely related, but still can be recognized as two separated constructs (Porter *et al*. 1974).

Bateman and Strasser (1984) believe that commitment is a precursor of satisfaction. However, as opposed to Bateman and Strasser (1984) and Porter *et al*. (1974), Curry *et al.* (1986) and Currivan (1999) have indicated that there are no relation between satisfaction and commitment. More recently, Huang and Hsiao's (2007) findings show that the reciprocal relation between commitment and job satisfaction fits the data best. According to analysis by Currivan (1999), the dominant view in the literature assumes job satisfaction causes commitment and this assumption is supported by (Wallace, 1995).

Conclusively, there are four causal orders between job satisfaction and commitment;

(a) Job satisfaction precedes commitment,

(b) Commitment precedes job satisfaction,

(c) Job satisfaction and commitment have a reciprocal relationship and

(d) Job satisfaction and commitment have no significant relationship.

Although the literature cannot give total clarity about the causal order of job satisfaction and organizational commitment, the majority of the literatures have shown that job satisfaction is causally related to commitment and as a precursor of commitment. Therefore, job satisfaction will be used as a antecedent of commitment. Although organizations spend millions of dollars each year in their attempts to comply with fair employment laws, many organizations continue to have problems with employees who perceive unfair treatment in promotion decisions. Procedural justice refers to the perceived fairness or equity of the procedures used in making decisions regarding the distribution of rewards such as promotion. Previous studies have indicated a positive relationship between procedural justice and organizational commitment. However, these findings are related to the effect of unfair selection decisions on organizational commitment instead of specifically focusing on justice perceptions in promotion decisions. Because employee perceptions of unfairness may result in negative consequences for organizations, the purpose of examine the significance of procedural justice in promotion decisions in predicting organizational commitment.

Organizational commitment has been assessed using Mowday, *et al*. (1979) Organizational Commitment Questionnaire (OCQ). This instrument consists of 15 items, nine which are positively scored and six which are negatively scored. The reverse scoring reduces the possibility of response set bias. The items ask workers to express their agreement or disagreement with various statements (e.g. "I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful"), using seven-point scales (1 = strongly disagree, 7 = strongly agree). Reliability for the scale in this study was = 0.88, which is comparable to previous studies.

Control variables as workers increase in age, tenure, and job prestige, they experience higher levels of organizational commitment (Marsh and Mannari, 1977). Specifically, older employees with higher levels of tenure may experience higher levels of commitment than younger workers with less time invested in the company (Meyer and Allen, 1984). In addition, the effect of job prestige on commitment leads to the inference that employees holding management positions should have higher levels of commitment than employees in hourly positions. Thus, the calculation of

the equation has included age, employee position, and organizational tenure as control variables. The difference between female and male perceptions of fairness has been examined by several researchers with differing results. While several studies have found that differences exist in fairness perceptions between men and women (Brockner and Adsit, 1986; Tata, 2000), Witt and Nye (1992), indicate that there is no difference between the two groups. Considering the recent interest in the glass ceiling for women and its potential effect on perceptions of fairness (Lemons and Jones, 2001 refer to Lemons and Danehower, 1996), gender is also included as a control variable.

Baruch (1998) believes that employee attitudes are making organizational commitment less important than in previous years. Because many organizations seem to be more concerned with profits than people, he feels that commitment is a construct whose time is past. Additionally, Becker *et al.* (1996) also indicate that "commitment to supervisors was positively related to performance and was more strongly associated with performance than was commitment to organizations". On the other hand, Benkhoff (1997) has conducted empirical research in Germany and found that "employee commitment is significantly related to the financial success of bank branches".

2.6 The Demographic of the Study

Demography is the statistical study of living human populations. It can be a very general science that can be applied to any kind of dynamic living population, i.e., one that changes over time or space. It encompasses the study of the size, structure, and distribution of these populations, and spatial and/or temporal changes in them in response to birth, migration, aging and death (Wikipedia, 2013 a).

In a study by Perl and Griffin (2009) study about 21st century end-user attitudes toward Information Technology, demographic variables have been considered as moderator variables. However, due to time constraints, only demographic variables of gender, age, and education are chosen as the most likely to influence the outcome of the survey.

Most research in the area of computer phobia and end-user attitudes toward computers have centered on these three demographic variables. The demographic variables are presented on the cover page of the questionnaire. Respondents are given boxes to check. Numbers from 1 to 5 were assigned to all possible responses, depending on how many responses are possible for each variable.

A model presented by Fishbein and Ajzen (1975) shows that individual viewpoints or beliefs about objects lead to attitudes towards them. These viewpoints or beliefs may arise from experiences or what others say. If an individual's viewpoint or belief is positive, then attitude is also positive. Attitudes, in turn, may lead to certain behavior patterns towards an object such as a challenge to pursue or something to avoid. Consequently, these behavior patterns or intentions affect the individual's actual behavior towards the object. Behaviors in turn affect beliefs and are able to modify an individual's viewpoint towards an object.

Fishbein and Ajzen (1975) have hypothesized that manifesting a certain behavior about an object reinforces individual attitudes Whereas, behaviors that are not reinforced may change an individual's beliefs either positively or negatively, and

REFERENCES

Abele, A. E., and Spurk, D. (2009). The longitudinal impact of self-efficacy and career goals on objective and subjective career success. *Journal of Vocational Behavior*, 74, 53-62.

Al-Hammadany F. H. and Heshmati A. (2011). Determinants of Internet Use in Iraq. *International Journal of Communication*, Vol. 5, pp. 01-23.

Aliyu A. A., Younis S. M.D. and Tasmin R.H. (2012). An Exploratory Study on Adoption of Electronic Banking: Underlying Consumer Behaviour and Critical Success Factors. *Case of Nigeria, Business and Management Review*, 2(1), 01 – 06.

Allwood, C. M. and Wang, Z. (1990). Conceptions of computers among students in China and Sweden. *Computers in Human Behavior*, Vol. 6, pp. 185-199.

Anderman, E., Belzer, S., and Smith, J. (1991). *Teacher commitment and satisfaction: The role of school culture and principal leadership*. Urbana, IL: National 3 Centers for School Leadership. Available from Education Resources Information Center. (ED375497).

Attar G. and Sweiss R. (2010). The relationship between information technology adoption and job satisfaction in contracting companies in Jordan, *Journal of Information Technology in Construction,* Vol. 15, pp. 44-63.

Ballout, H.I. (2009). Career commitment and career success: Moderating role of self-efficacy. *Career Development International*, 14(7), 655-670.

Balzer, W. K., Kihm, J. A., Smith, P.C., Irwin, J.L., Bachiochi, P.D., Robie, C., Sinar, E.F., and Parra, L.F. (1997). *User's Manual for the Job Descriptive Index and the Job in General Scales.* Bowling Green, OH: Bowling Green State University, pp 10.

Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. New York, NY. W.H. Freeman and Company.

Baruch, Y. (1998). Walking the tightrope: Issues for human resources. Long Range Planning: *International Journal of Strategic Management*, 31, 467–475.

Bassi, J. L. and Van Buren, M. E. (1999). Sharpening the Leading Edge. *Training and Development,* 53 (1), 23-31.

Bateman T. S. and Strasser S. (1984). A longitudinal analysis of the antecedents of organizational commitmen, *Academy of Management Journal*, 27, 95-112.

Becker, T. E., Billings, R. S., Eveleth, D. M., and Gilbert, N. W. (1996). Foci and bases of commitment: Implications for performance. *Academy of Management Journal,* 39,464–482.

Benkhoff, B. (1997). Ignoring commitment is costly: New approaches establish the missing link between commitment and performance. *Human Relations*, 50(6): 701-726.

Berings, M. G. M. C., Poell, R. F., Simons, P. R. J. and Van Veldhoven. M. J. P. M. (2007). The development and validation of the On-the-job Learning Styles Questionnaire for the Nursing Profession. *Journal of Advanced Nursing*, 58, 480-492.

Betz, F. (1993). *Strategic Technology Management*, McGraw-Hill, New York, NY.

Blood, G. W., Ridenour, J. S. and Thomas, E. A. (2002). Predicting job satisfaction among speech-language pathologists working in public schools. *Language, Speech, and Hearing Services in Schools*, 33, 282–290

Bokhari, R. H. (2005) The relationship between system usage and user satisfaction: a meta-analysis, *Journal of Enterprise Information Management*, Vol. 18 Issue: 2, pp.211 – 234.

Brockner, J. and Adsit, L. (1986). Sex and position as predictors of organizational commitment. *Academy of management Journal*, 26, 485-491.

Buitendach, J. and de Witte, H. (2005). Job insecurity, extrinsic and intrinsic job satisfaction and affective organisational commitment of maintenance workers in a parasternal. *South African Journal of Business Management*, 36(2), 27-37.

Burns, J. M. and Grove, K. (1993). *The practice of nursing research: Conduct, critique and utilization* (2nd ed.). Philadelphia: Saunders.

Camp, S.D. (1994). Assessing the effects of organisational commitment and job satisfaction on turnover: An event history approach. *Prison Journal*, 74(3), 279-306.

Campbell, E. and Blumenthal D. (2002). Data Sharing and Withholding in Academic Genetics. *Journal of Science (Science Careers),* from: http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2002_05_31/nodoi.5822398718525511595.

Cesar Caballero (2003). Strategic Planning as a Prerequisite to Strategic Marketing Action in Libraries and Information Agencie". *The Acquisitions Librarian*, Volume 14, Issue 28, pp33-59.

Chelladurai, P. (1999). Human Resource Management in Sport and Recreation. United States: Human Kinetics, p. 230.

Chua, Y. P. (2006). *Research Method.* Malaysia: McGraw-Hill Companies.

Currivan, D.B.(1999) The Causal order of Job Satisfaction and Organizational Commitment in models of Employee Turover, *Human Resource Management Review*, Vol.9, pp.495-524.

Curry, J.P., Wakefield, D.S., Price, J.L. and Mueller, C.W., (1986). On the causal ordering of job satisfaction and organizational commitment, *The Academy of Management Journal,* Vol.29, No.4, pp. 847-858.

Dijk, M. V. (2009). *Employee Self Efficacy and Job Stress during Organizational Change: The Mediating Effect of Risk Perception*. Faculty of Behavioral sciences, University of Twente, Netherlands.

Douglas G. Birdsall, (1997). *Strategic Planning Models in Academic Libraries, Encyclopedia of Library and Information Science*, 59/suppl. 22 (New York: Marcel Dekker, 292–315.

Danziger, J. and Dunkle, D. (2005). *Information Technology and Worker Satisfaction. Center for research on information technology and organisations*, retrieved from Retrieved from http://crito.uci.edu/papers/2005/ITWorkerSatisfaction.pdf

Du Toit, S.C. (1994). *Management factors which affect the job satisfaction of black female teachers.* Unpublished MEd dissertation. Potchefstroom: Potchefstroom University for Christian Higher Education.

Enos, M. D., Kehrhahn, M. T. and Bell, A. (2003). Informal learning and the transfer of learning: How managers develop proficiency. *Human Resource Development Quarterly*, 14, 370.

Farina, F, Arce, R., Sobral, J. and Carames, R. (1991). Predictors of anxiety towards computers. *Computers in Human Behavior*, Vol. 7, pp. 263-267.

Farrugia, C. (1986). Career-choice and sources of occupational satisfaction and frustration among teachers in Malta, *Comparative Education*, Vol.22, No.3, pp. 221-231.

Fernandez, Mary, Chow and Dennis (1999). *Intellectual Property Rights in Bioinformatics*. Fernandez and Associates LLP; 2.

Fishbein, M. and Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research.* Reading, MA: Addison-Wesley.

Fishbein, M. A. (1979). *Theory of reasoned action: Some applications and implications.* In H. Howel and M. Page (Eds.), Nebraska Symposium on Motivation pp. 65-116. Lincoln: University of Nebraska Press.

Fisher, C.D. (2002), Antecedents and consequences of real time affective reactions at work, *Motivation and Emotion*, 26, 1–30.

Floyd, S.W. and Wolf, C. (2010) *'Technology Strategy*. In: Narayanan, V.K. and O'Connor, G.C. (eds.) Encyclopedia of technology and innovation management. West Sussex: Wiley pp. 125-128. ISBN 1-4051-6049-7.

Ford, D. and Saren, M. (1996). *Technology Strategy for Business*, Thomson Business Press, London.

Friar, J. and Horwitch, M. (1986), *The emergence of technology strategy: a new dimension of strategic management,* in Horwitch, M. (Ed.), Technology in the Modern Corporation: A Strategic Perspective, Pergamon Press, New York, NY, pp. 50-85.

Gasco J. L., Llopis J. and Gonzalez M. R. (2004). The use of information technology in training human resources: An E-learning case study. *Journal of European Industrial Training,* Vol. 23(5), pp. 370–382.

Glass, C. G. and Knight, L. A. (1988). Cognitive factors in computer anxiety. *Cognitive Therapy and Research*, Vol. 12, pp. 351-366.

Glisson C. and Durick M. (1988). Predictors of job satisfaction and organizational commitment in human service organizations, *Administrative Science Quarterly*, 33(1), pp, 61-81.

Gutkin, T. B. (1985). The behavior sciences in the computer age. *Computers in Human Behavior*, Vol. 1, pp. 3-18.

Hansen, M. D. (1991). *Zero defect data,* Massachusetts Institute of Technology, Sloan School of Management.

Harry J. and Martin, (2010). Improving training impact through effective follow-up: techniques and their application, *Journal of Management Development*, Vol. 29 Iss: 6, pp.520 – 534.

Hickson D. J., Pugh D. S. and Pheysy D. C. (1969). Operation Technology and Organization Structure: An Empirical Reappraisal, *Administrative Science Quarterly,* Vol. 14, No.3, 378-397.

Hornby, A. S. (1994). Oxford *Advanced Learner's Dictionary of Current English.* Oxford: Oxford University Press.

Hoy, W. K. and Miskel, C. E. (1996). *Educational Administration: Theory, Research and Practice.* McGraw-Hill, New York.

Huang. T. and Hsiao, W. (2007). The causal relationship between job satisfaction and organizational commitment. *Social Behavior and Personality*, 35(9), 1265-1276.

Isen, A. M. and Baron, R. A. (1991). Positive affect as a factor in organizational behavior. *Research in Organizational Behavior*, 13, 1–53.

Ivanov, K. (1972) *Quality-control of information: On the concept of accuracy of information in data banks and in management information systems*. The University of Stockholm and the Royal Institute of Technology.

Jerald M. and Savin, (2004). Information technology strategy – managing the dark side, *Handbook of Business Strategy,* Vol. 5 Issue: 1, pp.293 – 298.

Kahn, B., Strong, D. and Wang, R. (2002) *Information Quality Benchmarks: Product and Service Performance,* Communications of the ACM, April 2002. pp. 184–192.

Kenneth, Walter and Kemp (2001). *The efficient use of quality control data,* Oxford : Clarendon Press, pp 3.

Kenneth C., Laudon, Jane P. and Laudon (2006). *Management Information Systems: Managing the Digital Firm.* 9th edition, Pearson, Prentice Hall, pp 242.

Kim, I. and Loadman, W. (1994). *Predicting teacher job satisfaction*. Columbus: Ohio State University. (Eric Document Reproduction Service No. D383707).

Kovack, K.A. (1977). *Organisation size, job satisfaction, absenteeism and turnover*. Washington D.C.: University Press of America.

Krejcie, R. V. and Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological measurement*, 1970, 30, 607-610.

Leavitt, Harold J., Whisler and Thomas L. W. (1958), *Management in the 1980s, Harvard Business Review* 11.

Lemons, M. A. and Jones, C. A. (2001) Procedural justice in promotion decisions: using perceptions of fairness to build employee commitment, *Journal of Managerial Psychology,* Vol. 16 Issue: 4, pp.268 – 281

Locke, E. A. (1976). *The nature and causes of job satisfaction.* In M.D. Dunnette (Ed.), Handbook of industrial and organizational psychology (pp.1297 – 1350). Chicago: Rand McNally.

Longley, D. and Shain, M. (1985), *Dictionary of Information Technology* (2 ed.), Macmillan Press, p. 164, ISBN 0-333-37260-3.

Loyd, B. H. and Loyd, D. E. (1985). The reliability and validity of an instrument for the assessment of computer attitudes. *Educational and Psychological Measurement,* Vol. 45, pp. 903-908.

Ma, X. and Macmillan, R. B. (1999). Influences of workplace conditions on teachers job satisfaction. *Journal of Educational Research*, 93(1) 39-48.

Marsh, R. M. and Mannari, H. (1977). Organizational Commitment and Turnover: A Predictor Study, *Administrative Science Quarterly*, 22, P. 57-75.

Marsick, V. J. and Watkins, K. E. (1992). Continuous learning in the workplace. *Adult Learning Journal*, Vol. 3(4), pp. 9-12.

Meyer, J.P. and Allen, N.J. (1984). Testing the "side-bet theory" of organizational commitment: some methodological considerations. *Journal of Applied Psychology.* Vol. 69, No. 3, p. 372-378.

MnSCU IT Strategic Planning Team (January through June, 1999), *MnSCU IT Emerging Strategic Plan and Proposed Governance Structure,* pp 2. From http://www.mnscu.edu/board/policy/related/itsstrategicplanitgov. pdf.

Mols, N. P., Bukh, P. and Nielsen, J. (1999). Distribution channel Strategies in Danish retail Banking. *International Journal of Bank Marketing*, 27(1), 37-47.

Morrision, R. and Hock, R. (1986). *Career building: Learning from experience In D. Hall and Associates* (eds.), Career Development in Organizations, pp 236-273. San Francisco, CA: Jossey-Bass.

Mowday, R. T., Steers, R. M. and Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*. 14, p. 224-247.

Murrell, A. J. and Sprinkle, J. (1993). The impact of negative attitudes toward computers on employee's satisfaction and commitment within a small company. *Computers in Human Behavior*, Vol. 9, pp. 57-63.

Mwamwenda, T.S. (1995). Job satisfaction among secondary school teachers in Transkei. *South African Journal of Education*, 15 (2), 84-86.

Neumann, Y., Reichel, A. and Abusaad, I., (1988) Organizational climate and work satisfaction: the case of Beduin elementary schools. *Journal of Educational Administration,* 26 (1), 82-96.

Nicolaidis, C. and Katsaros, K. (2011) Tolerance of ambiguity and emotional attitudes in a changing business environment: A case of Greek IT CEOs, *Journal of Strategy and Management*, Vol. 4 Issue: 1, pp.44 – 61

Nieto, M. and Pe´rez-Cano, C. (2004), The Influence of Knowledge Attributes on Innovation *Protection Mechanisms, Knowledge and Process Management* Volume 11 Number 2 pp 117–126.

Nyagetera B. M. (2001) Malaysian Economic Development: Some Lessons for Tanzania *UTAFITI* (New Series) Special Issue, Vol. 4, pp1-30.

O'Connell, B. (1996). *Australian Banking on the Internet- Fact or Fiction*? The Australian Banker, 212-214.

Pancer, S. M., George, M. and Gebotys, R. J. (1992). Understanding and predicting attitudes towards computers. *Computers in Human Behavior*, Vol. 8, pp. 211-222.

Parvin M. M. and Nurul Kabir M. M. (2011). Factors affecting employee job satisfaction of pharmaceutical sector. *Australian Journal of Business and Management Research,* Vol.1 No.9, 113-123.

Perl M. and Griffin T. (2009), 21st Century End-User Attitudes Toward Information Technology. *Review of Business Information Systems – Second Quarter* 2009 Volume 13, Number 2, pp1-10.

Piaw, C. Y. (2006). *Kaedah Penyelidikan. Malaysia*: McGraw Hill.

Pope-Davis, D. B. and Vispoel, W. P. (1993). How instruction influences attitudes of college men and women towards computers. *Computers in Human Behavior,* Vol. 9, pp. 83-93.

Porter, L. W., Steers, R. M. and Boulian, P (1974). Organizational Commitment, Job Satisfaction and Turnover among Psychiatric Technicians. *Journal of Applied Psychology*, vol.59, pp. 603-609.

Price, R. and Shanks, G. (2004). A Semiotic Information Quality Framework, Proc. *IFIP International Conference on Decision Support Systems (DSS2004):* Decision Support in an Uncertain and Complex World, Prato.

Rasil . (2006). *Data Analysis and interpretation*: A Handbook for postgraduate social scientists. Universiti Teknologi Malaysia. Johor: Malaysia.

Rathindra, S. and Krishnamurty, M. (2006). Secure and useful data sharing. *Journal of Science Direct, Elsevier, Decision Support Systems*, 42, 204–220.

Redman T. C. (1996). Data quality for the information age. Artech House Computer Science Library, pp 8.

Rice, E. M. and Schneider, G. T. (1994). A decade of teacher empowerment: An empirical analysis of teacher involvement in decision making". *Journal of Educational Administration,* 32(1), 43-58.

Rigotti, T., Schyns, B. and Mohr, G. (2008). A short version of the Occupational self efficacy scale. Structural and construct validity across five countries. *Journal of Career Assessment*, 16, 238-255.

Robbins, S. P. (1998). *Organisational behavior*. (8th ed.). New Jersey: Prentice Hall, pp 25.

Sanders, J. (2010). *Spurring America's Economic Renaissance*. Economy in Crisis. Retrieved 31 January 2011.

Sathye, M. (1999). Adoption of Internet Banking by Australian Consumers: An Empirical Investigation, *International Journal of Bank Marketing*, 17(7), 324-334.

Saunders, M., Lewis, P. and Thornhill A. (2007). *Research Methods for Business Students,* Prentice Hall.

Savage C. J. and Vickers A. J. (2009). Empirical Study of Data Sharing, Publishing in *PLoS Journals*, Vol. 4(9), pp 1-3.

Schyns, B. and Collani, G.V. (2002). A new occupational self-efficacy scale and its relation to personality constructs and organisational variables. *European Journal of Work and Organizational Psychology*, 11, 219-241.

Sekaran, U. (2003). *Research Methods for Business.* 4th ed. New York: John Wiley.

Sempane, M., Rieger, H. and Roodt, G. (2002). Job satisfaction in relation to organisational culture. *South African Journal of Industrial Psychology*, 28(2), 23-30.

Sexton, M. and Barrett, P. S. (2004). The Role of Technology Transfer in Innovation within Small Construction Firms, *Engineering, Construction and Architectural Management,* 11 (5): 342-348.

Shan, M. H. (1998). Professional commitment and satisfaction among teachers in urban middle schools. *Journal of Educational Research*, (Issue 2), 67.

Shrivastava, P. and Souder, W. (1987). The strategic management of technological innovations: A review and a model, *Journal of Management Studies*, Vol. 24, pp.25–41.

Smith, R. D. (2003). The Chief Technology Officer: Strategic responsibilities and relationships. *Research technology management*, pp 1-14.

Somogyi, E. K. and Galliers R. D. (2003). Developments in the Application of Information Technology in Business: from data processing to strategic information systems. pp 14, 31.

Souder, E. (1987). *Operations technology and organizat, Managing New Product Innovations*, Lexington Books, Lexington MA.

Spector, P.E. (1997). *Job satisfaction: Application, assessment, cause, and consequences.* Thousand Oaks, CA: Sage Publications, Inc.

Sproull, L., Zubrow, D. and Kiesler, S. (1986). Cultural socialization to computing in college. *Computers in Human Behavior*, Vol. 2, pp. 257-275.

Steven W. and Schmidt (2007). The relationship between satisfaction with workplace training and overall job satisfaction. *Human Resource Development Quarterly,* Volume 18, Issue 4, pages 481–498, winter 2007.

Strumpfer, D.J.W., Danana, N., Gouws, J.F. and Viviers, M.R. (1998). Personality dispositions and job satisfaction. *South African Journal of Psychology*, 28 (2), 92-100.

Tata, J. (2000). Influence of role and gender on the use of distributive versus procedural justice. *Journal of Psychology,* 134 (3), 261-268.

Temple, L. and Lips, H. M. (1989). Gender differences and similarities in attitudes toward computers. *Computers in Human Behavior*, Vol. 5, pp. 215-226.

Terrion (2006), The impact of a management training program for university administrators. *Journal of Management Development,* Vol. 25 No. 2 pp. 184

Van der Westhuizen, P. and Smit, C. (2001). Job satisfaction of the circuit manager. *South African Journal of Education*, 21(2), 75-80.

Visser, P., Breed, M. and Van Breda, R. (1997). Employee satisfaction: A triangulation approach. *South African Journal of Industrial Psychology*, 23(2), 19-24.

Wallace, J. E. (1995). Corporatist Control and Organizational Commitment among Professionals: The Case of Lawyers Working in Law Firms, *Social Forces*, Vol.73, No. 3. pp. 811-840.

Wallis (1997). *The Financial System Inquiry Final Report*, AGPS, Canberra.

Wand, Y. and Wang, R. (1996). Anchoring Data Quality Dimensions in Ontological Foundations, *Communications of the ACM*, November 1996. pp. 86–95.

Watkins, K. E. and Marsick, V. J. (Ed.). (2003). Make learning count; Diagnosing the Learning Culture in Organizations Advances in Developing Human Resources, *Human Resource Development International*, Vol. 5 (2), pp. 132–51.

Weil, M. M., Rosen, L. D. and Wugalter, S. (1990). The etiology of computerphobia, *Computers in Human Behavior,* Vol. 6, pp. 361-379.

Weil, M. M., Rosen, L. D. and Sears, D. C. (1987). The computerphobia reduction program: Year 1. Program development and preliminary results, *Behavior Research Methods, Instruments, and Computers,* Vol. 19, pp. 180-184.

Weiss, H. M. and Cropanzano R. (1996). Affective events theory: a theoretical discussion of the structure, causes and consequences of affective experiences at work, in B.M. Staw and L.L. Cummings (eds), *Research in Organizational Behavior*, vol. 18, Greenwich, CT: JAI Press, pp. 1–74.

Wiersma, W. (1995). *Research methods in education: an introduction,* 6th ed.

Wikipedia (2013 a). Demography. Retrieved February 09, 2013, from http://en.wikipedia.org/wiki/Demography.

Wikipedia (2013 b). *Cronbach's alpha*. Retrieved February 09, 2013, from http://en.wikipedia.org/wiki/Cronbach%27s_alpha.

Wikipedia (2013 c). Data quality. Retrieved February 09, 2013, from http://en.wikipedia.org/wiki/Data_quality.

Wim J. N., Margriet J. D. and Beukhof, G. (1998). Employee commitment in changing organizations: an exploration, *Journal of European Industrial Training,* Vol. 22 Iss: 6, pp.243 – 248.

Wisniewski, L. and Gargiulo, R. (1997). Occupational stress and burnout among special educators: A review of the literature, *The Journal of Special Education,* 31, 325-346.

Witt, L. A. and Nye, L. G. (1992). Gender and the relationship between perceived fairness of pay of promotion and job satisfaction. *Journal of Applied Psychology,* 77:910-917.